

In the Claims

1. (currently amended) A method for *in vitro* transcription of mRNA and/or translation of polypeptides, the method comprising:

synthesizing said mRNA and/or polypeptides in a cell-free reaction mixture of greater than about 15 μ l volume, comprising an antifoam agent at a concentration of at least 0.00007%, and not more than 0.007% by weight, wherein the antifoam agent is other than a detergent.

2. (currently amended) The method of Claim 1, wherein said ~~synthesis of biological macromolecules~~ synthesizing comprises translation of mRNA to produce polypeptides.

3. (currently amended) The method of Claim 2 wherein said ~~synthesis~~ synthesizing also comprises transcription of mRNA from a DNA template.

4. (canceled)

5. (currently amended) The method of Claim 2, wherein said reaction mix comprises a volume of greater than ~~about~~ 100 μ l.

6. (previously presented) The method of Claim 5, wherein said reaction has a yield that is at least about 90% of the yield in a comparable small scale reaction.

7-11 (canceled)

12. (currently amended) The method of ~~Claim 11~~ Claim 1, wherein the anti-foam agent is a block copolymer that provide defoaming/antifoaming action by forming an insoluble monolayer at the air/water interface of the foam.

13. (currently amended) A method for *in vitro* transcription of mRNA and/or translation of polypeptides, the method comprising:

synthesizing said mRNA and/or polypeptides in a cell free reaction mixture of greater than about 15 μ l volume, comprising:

a cell extract; a template for production of the mRNA and/or polypeptides; monomers for the mRNA and/or polypeptides to be synthesized; and such co-factors, enzymes and other reagents that are necessary for the synthesis; and an anti-foam agent at a concentration of at least about

0.00007%, and not more than about 0.007% by weight, wherein the antifoam agent is other than a detergent.

14. (canceled)

15. (currently amended) The reaction mixture of ~~Claim 4~~ Claim 13, wherein the anti-foam agent is a block copolymer that provide defoaming/antifoaming action by forming an insoluble monolayer at the air/water interface of the foam.

16. (currently amended) A reaction mixture for cell-free synthesis of biological macromolecules, comprising:

a cell extract; a template for production of the macromolecule; monomers for the macromolecule to be synthesized; and such co-factors, enzymes and other reagents that are necessary for the synthesis; and an anti-foam agent other than a detergent at a concentration of at least about 0.00007%, and not more than about 0.007% by weight; and

~~an anti-foam agent at a concentration of at least about 0.00007%, and not more than about 0.007% by weight.~~

17. (previously presented) The method of Claim 1 wherein oxidative phosphorylation is activated in the cell-free reaction mixture.

18 (new) The method of Claim 1 wherein said reaction mixture comprises a volume of greater than 1000 μ l.

19 (new) The method of Claim 1, wherein said synthesizing is performed in a reactor.

20 (new). The method of Claim 19, wherein the reactor is a bubble reactor.

21 (new) The reaction mixture of Claim 16, wherein the anti-foam agent is a block copolymer that provide defoaming/antifoaming action by forming an insoluble monolayer at the air/water interface of the foam.